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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,038	12/01/2000	Hung Chen	AMAT/3778/CMP/CMP/RKK	2584

7590 03/15/2002
Patent Counsel
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EXAMINER

GRANT, ALVIN J

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 03/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/728,038

Applicant(s)

CHEN ET AL.

Examiner

Alvin J Grant

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 4, 5, 6, 8, 9, 11, 14, 15, 16, 18, 19, 20, 26 and 27 are rejected under 35 U.S.C. 102(a) as being anticipated by Elliott et al. ' 540.

Elliott et al. disclose a semiconductor polishing device with one surface defining at least one non-intersecting fluid retaining groove, at least a portion of which is oriented at an angle relative to the radial line originating at its center, is adapted to flow a fluid inwardly toward a center portion of its surface, and is adapted to be used with a rotary polisher (see figure 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott et al. Elliott et al. is described above.

Referring to claim 3, Elliott et al. do not disclose a groove having varying slope. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the pad of Elliott et al. to change the depth of the grooves to increase or decrease the rate of flow, hence the quantity, of the slurry.

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Referring to claim 17, Elliott does not specifically disclose that polishing pad is constructed of polyurethane. However, the use of polyurethane for CMP pad construction is well known in the art and is obviously a matter of engineering design choice.

Claims 2, 12, 13, 23, 24, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott et al. in view of Beardsley et al., U.S. Patent No. ' 515 B1.

Elliott et al. is described above. Elliott et al. do not disclose a platen containing non intersecting fluid retaining grooves. Beardsley et al. disclose a CMP apparatus comprising a rotating platen that contains recesses that distributes the slurry, which provides for a uniformly planarized workpiece and also creates a system which also removes slurry for disposal or reuse. (See figures 4 and five). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the platen of the Elliott et al. to include grooves so as to distribute the slurry along prescribed paths assuring more even distribution of the slurry and creating a system for removing the slurry for reuse or disposal as taught by Beardsley et al.

Claims 7, 10, 21, 22, 25 and 29 are rejected under 35 U.S. C. 103 (a) as being unpatentable over Elliott et al. in view of Beardsley et al. and further in view of Okamura et al, U.S. Patent No: ' 596 B1. Elliott et al. as modified is described above. Elliott et al. do not disclose a polishing pad with linear grooves. Okamura et al. disclose an apparatus for chemical mechanical polishing using polishing pads containing linear grooves (see figures 3 and 4) to provide for a more even distribution of pressure on the workpiece thus producing better quality finish. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the platen of Elliott to include linear grooves so as to allow for distribution of the slurry and the pressure transmitted to the workpiece as taught by Okamura.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Jackson et al., U.S. Patent No: 5,643,061.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alvin J Grant whose telephone number is (703) 305-3315. The examiner can normally be reached on Mon.-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on (703) 308-2687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3579 for regular communications and (703) 305-3588 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1184.

Alvin J Grant
Examiner
Art Unit 3723

ajg
March 11, 2002


Timothy V. Eley
Primary Examiner